REMARKS

The Final Official Action dated May 21, 2003, and the Advisory Action dated October 17, 2003, have been received and their contents carefully noted. A Notice of Appeal was filed by the Applicants on November 14, 2003. Filed concurrently herewith is a *Request for One Month Extension of Time*, which extends the shortened statutory period for response to February 14, 2004. Also, filed concurrently herewith is a *Request for Continued Examination*. Accordingly, the Applicants respectfully submit that this response is being timely filed.

The Applicants note with appreciation the consideration of the Information Disclosure Statements filed on December 19, 2001, April 26, 2002, July 5, 2002, and July 16, 2002, and of the resubmission of references filed on September 22, 2003.

Regarding the IDS filed June 29, 2001, although the Examiner has now considered the references resubmitted on September 22, 2003, upon further review, it appears that the Examiner has also overlooked the citation of JP 08-078329 cited on the first page of the IDS filed June 29, 2001, and the fourteen (14) U.S. Patent Documents cited on the second page of the IDS filed June 29, 2001. The Applicants respectfully request that the Examiner provide an initialed copy of the PTO-1449 Form filed June 29, 2001, evidencing consideration of JP 08-078329 and fourteen (14) U.S. Patent Documents. As a courtesy to the Examiner, the Applicants have attached copies of the partially considered PTO-1449 Forms (2 pages) which were included with the Official Action mailed April 24, 2002 (Paper No. 6). If there are any particular references that cannot be located by the Examiner in the present or parent application (Serial No. 09/352,198), the Applicants request that such references be identified in a subsequent communication.

A further IDS is submitted herewith and consideration of this IDS is respectfully requested.

Claims 1-17 and 19-30 were pending in the present application prior to the above amendment. New claims 47-58 have been added to recite additional protection to which the Applicants are entitled. Accordingly, claims 1-17, 19-30 and 47-58 are now

pending in the present application, of which claims 1-12, 19, 20, 47 and 48 are independent. The Applicants note with appreciation the allowance of independent claims 1 and 7. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

The Advisory Action mailed October 17, 2003, continues to assert the rejection made in paragraph 4 of the Final Official Action mailed May 21, 2003, that is, claims 2-6, 8-12 and 19-30 are rejected as obvious based on the combination of U.S. Patent No. 6,077,731 to Yamazaki et al. and JP 09-186336 to Kudo et al. The Applicants respectfully traverse the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Yamazaki '731 and Kudo do not teach or suggest removing an oxide film prior to a leveling step (independent claims 2-6 and 19), or

treating a surface of a semiconductor film with a hydrofluoric acid prior to a leveling step (independent claims 8-12 and 20).

The Official Action asserts that "[in] light of the specification, the term 'leveling' has no ... other special meaning and interpretation except annealing the semiconductor substrate in oxygen or inert atmosphere after removing and cleaning step performed" (page 3, Advisory Action dated October 17, 2003). Although not stated explicitly, the Official Action appears to be taking the position that the first heat treatment (crystallization) in column 13, lines 10-18 of Yamazaki includes the claimed leveling step of the present invention. That is, the Official Action appears to assert that the claimed leveling step would inherently occur during the crystallization step disclosed in Yamazaki.

With respect to independent claims 2-6 and 19, the Final Official Action and Advisory Action assert that Yamazaki '731 teaches "removing an oxide film ... and leveling the surface of the semiconductor film by heating after removing said oxide film" (page 4, Paper No. 15, citing Yamazaki '731 at Figs. 5A-6F and column 13, lines 10-18; and page 3, Paper No. 20031012). The Applicants respectfully disagree and traverse the above-referenced assertions in the Official Actions. Assuming, *arguendo*, that the first heat treatment (crystallization) in column 13, lines 10-18 of Yamazaki '731 includes the claimed leveling step of the present invention, it appears that Yamazaki '731 fails to teach or suggest removing an oxide film prior to a leveling step. Rather, it appears that Yamazaki '731 teaches a heat treatment, as noted above, then forming a thermal oxide film (column 13, line 41), and then removing the thermal oxide film (column 13, line 62). Therefore, Yamazaki '731 does not teach or suggest removing an oxide film prior to a leveling step. Specifically, Yamazaki '731 does not teach or suggest "leveling the surface of the semiconductor film by heating in a reducing atmosphere after removing said oxide film."

With respect to independent claims 8-12 and 20, the Final Official Action and Advisory Action assert that Yamazaki '731 teaches "leveling the surface of the semiconductor film by heating after the treatment with said hydrofluoric acid" (page 5,

Paper No. 15, citing the entire disclosure of Yamazaki '731; and page 3, Paper No. 20031012). The Applicants respectfully disagree and traverse the above-referenced assertions in the Official Actions. Still assuming, *arguendo*, that the first heat treatment (crystallization) in column 13, lines 10-18 of Yamazaki '731 includes the claimed leveling step of the present invention, it appears that Yamazaki '731 fails to teach or suggest treating a surface of a semiconductor film with a hydrofluoric acid prior to a leveling step. Rather, it appears that Yamazaki '731 teaches a "heat treatment ... within a nitrogen atmosphere" (column 14, line 36), then a "heat treatment ... within an oxygen atmosphere (atmospheric pressure) containing 3 volume% of HCl" (column 14, line 42). Similarly, although Yamazaki '731 appears to teach eliminating the thermal oxide film (6) using buffer hydrofluoric acid (column 38, lines 34-39), it appears that this step is conducted after, not prior to, the heat treatment (crystallization) step. Therefore, Yamazaki '731 does not teach or suggest treating a surface of a semiconductor film with a hydrofluoric acid prior to a leveling step. Specifically, Yamazaki '731 does not teach or suggest "leveling the surface of the semiconductor film by heating after the treatment with said hydrofluoric acid in a reducing atmosphere."

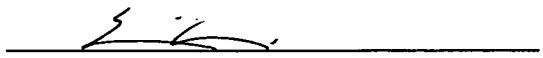
Kudo does not cure the deficiencies in Yamazaki '731. The Official Action relies on Kudo to allegedly teach an irradiation of a laser light in air (Id.). Yamazaki '731 and Kudo, either alone or in combination, do not teach or suggest removing an oxide film prior to a leveling step, or treating a surface of a semiconductor film with a hydrofluoric acid prior to a leveling step.

Since Yamazaki '731 and Kudo do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) are in order and respectfully requested.

New claims 47-58 have been added to recite additional protection to which the Applicants are entitled. For the reasons stated above and already of record, the Applicants respectfully submit that new claims 47-58 are in condition for allowance.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,



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